

## Clearfield lentil tolerance to Sharpen

The objective of this study was to evaluate Clearfield lentil tolerance to Sharpen applied alone PRE (0.75 or 1 fl oz) or tank mixed with Prowl H2O. Glyphosate was included with all PRE treatments. Clearfield lentil ('Maxim') was seeded May 10 into 7.5-inch rows into stubble. PRE treatments were applied May 12. Beyond was applied POST on June 8 to all treatments when lentils were 4- to 6-inches tall. Note that Sharpen is not labeled at this time for use in lentils. (The last treatment in Table 1 is considered a 2X rate of Sharpen + Prowl.)

Sharpen applied alone caused minimal visible injury at either rate (Table 1). Significantly more lentil injury was observed with Prowl. Adding Prowl to the tank mix increased injury up to 17% at normal rates and tended to reduce crop density. This is not uncommon to see 5-15% lentil injury from Prowl or other Group 3 herbicides. Crop injury was as much as 25% with the 2X rate of Sharpen + Prowl; however, the lentils recovered over time and this treatment resulted in the highest yield, likely due to better weed control. Beyond provided excellent control of pigweed, lambsquarters, and foxtail, but poor control of wild buckwheat (Table 2). The 2X rate of Sharpen + Prowl followed by Beyond provided better wild buckwheat control (83%).

Table 1. Clearfield lentil tolerance to Sharpen. (1016)

Treatment <sup>ab</sup>	Rate	Lentil								
		Injury				Density	Height		Yield	TW
		28 May	8 Jun	25 Jun	9 Jul	19 Jun	2 Jul	26 Jul	25 Aug	25 Aug
		-----%-----				m row	cm		lb/A	lb/bu
Beyond	4 fl oz	0	0	0	0	31.8	22.4	39.5	1567	62.6
Sharpen / Beyond	0.75 fl oz / 4 fl oz	0	2	1	1	30.5	24.1	36.3	1410	61.3
Sharpen / Beyond	1 fl oz / 4 fl oz	0	2	4	2	31.4	23.5	32.6	1500	61.2
Sharpen + Prowl H2O / Beyond	0.75 fl oz + 2 pt / 4 fl oz	0	7	15	12	24.7	22.3	32.4	1821	62.4
Sharpen + Prowl H2O / Beyond	1 fl oz + 2 pt / 4 fl oz	0	7	17	12	28.2	21.7	36.1	1701	62.6
Prowl H2O / Beyond	1.5 pt / 4 fl oz	0	2	9	8	32.0	22.8	38.5	1361	62.2
Sharpen + Prowl H2O / Beyond	1.5 fl oz + 4 pt / 4 fl oz	0	16	25	19	25.8	20.3	36.7	1896	63.0
Untreated		0	0	0	0	27.0	28.9	31.2	100	--
LSD (0.05)		NS	1	4	5	NS	3	NS	529	NS
CV		0	17	23	41	11	7	10	23	1

<sup>a</sup>Sharpen and Prowl applied PRE; Beyond applied POST. Glyphosate applied PRE to all treatments except untreated.

<sup>b</sup>Beyond applied with NIS (0.25%) + 28% N (2.5%); Sharpen applied with MSO (1%)

Table 2. Weed control with Sharpen tank mixes followed by Beyond. (1016)

Treatment <sup>ab</sup>	Rate	Weed Control <sup>c</sup>							
		Wibw		Rrpw		Colq		Grft	
		8 Jun	9 Jul	8 Jun	9 Jul	8 Jun	9 Jul	8 Jun	9 Jul
		-----%-----							
Beyond	4 fl oz	60	53	80	100	80	100	60	99
Sharpen / Beyond	0.75 fl oz / 4 fl oz	68	57	85	100	83	100	57	98
Sharpen / Beyond	1 fl oz + / 4 fl oz	68	59	85	100	83	98	57	98
Sharpen + Prowl H2O / Beyond	0.75 fl oz + 2 pt / 4 fl oz	76	64	93	100	90	100	87	99
Sharpen + Prowl H2O / Beyond	1 fl oz + 2 pt / 4 fl oz	73	66	92	100	87	100	83	99
Prowl H2O / Beyond	1.5 pt / 4 fl oz	67	55	85	100	86	100	85	98
Sharpen + Prowl H2O / Beyond	1.5 fl oz + 4 pt / 4 fl oz	89	83	97	100	96	100	95	100
Untreated		0	0	0	0	0	0	0	0
LSD (0.05)		9	8	9	NS	7	1	5	2
CV		8	7	8	0	5	1	5	2

<sup>a</sup>Sharpen and Prowl applied PRE; Beyond applied POST. Glyphosate applied PRE to all treatments except untreated.

<sup>b</sup>Beyond applied with NIS (0.25%) + 28% N (2.5 %); Sharpen applied with MSO (1%)

<sup>c</sup>Wibw= Wild buckwheat; Rrpw= Redroot pigweed; Colq= Common lambsquarters; Grft= Green foxtail